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August 30, 2017

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, N.W.
TW-A325
Washington, D.C. 20554

Re: NECA 2018 Modification of the Average Schedule Universal Service High Cost Loop Support Formula, WC Docket No. 05-337

Dear Ms. Dortch:

Attached is *NECA's 2018 Modification of the Average Schedule Universal Service High Cost Loop Support Formula*. This filing contains proposed modifications to the formula used to calculate interstate universal service fund high cost loop expense adjustments for average schedule companies. These average schedule modifications are scheduled to take effect on January 1, 2018 and remain in effect through December 31, 2018.

This *2018 Modification of the Average Schedule Universal Service High Cost Loop Support Formula* has been filed electronically in the above-referenced docket.

Sincerely,

Attachment:
2018 Modification of the Average Schedule Universal Service High Cost Loop Support Formula

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

2018

NECA MODIFICATION OF THE AVERAGE SCHEDULE UNIVERSAL SERVICE HIGH COST LOOP SUPPORT FORMULA

August 30, 2017

NECA
80 South Jefferson Road
Whippany, NJ 07981

NECA MODIFICATION OF THE AVERAGE SCHEDULE
UNIVERSAL SERVICE HIGH COST LOOP SUPPORT FORMULA
EFFECTIVE JANUARY 1, 2018

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Summary

In this filing, the National Exchange Carrier Association, Inc. (NECA) proposes modifications to the formula used to calculate Universal Service Fund (USF) high cost loop (HCL) expense adjustments for average schedule companies.[1] This formula and associated cost per loop values are intended to govern HCL payments to average schedule companies eligible for HCL support in the 2018 calendar year.[2]

This filing describes results of NECA's studies to update the HCL Cost per Loop (CPL) formula, which continues to use methods approved by the Commission for determining average schedule USF payments in 2017.[3] As required by the FCC's March 30th *Rate of Return Reform Order*,[4] NECA continues to incorporate a 25 basis point annual reduction in the rate-of-return (RoR) used to compute the formulas. The *Rate of Return Reform Order* also adopted limits on operating expenses to be recovered through support. Under the proposed formulas, an Operating Expense (Opex) Limit Factor is accordingly applied to average schedule companies' CPL and USF payments.

[1] NECA submits proposed modifications to the average schedule HCL formula on an annual basis. *See National Exchange Carrier Association, Inc. 2005 Modification of Average Schedule Universal Service Formulas*, CC Docket No. 96-45, Order, 19 FCC Rcd. 24998 (2004).

[2] Section 54.1307 of the Commission's rules require all rate-of-return carriers to provide High Cost Loop Support data. The proposed formula and the associated cost per loop values will be used to satisfy these reporting requirements for all carriers, including average schedule companies receiving A-CAM and Alaska Plan support and not eligible to receive HCL support.

[3] *National Exchange Carrier Association, Inc., 2017 Modification of the Average Schedule Universal Service High Cost Loop Support Formula, High-Cost Universal Service Support*, WC Docket No. 05-337, Order, 28 FCC Rcd. 16885 (2016).

[4] *Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certifications*, WC Docket No. 14-58, *Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, 31 FCC Rcd. 3087 (2016) (*Rate of Return Reform Order*).

A. Background

The proposed average schedule HCL formula change is needed to assure payments to average schedule companies will simulate payments received by representative cost companies, as required by section 69.606(a) of the Commission's rules.

NECA proposes herein a formula relating cost per loop data of sample companies to their loops per exchange values (see Exhibit 1) as well as an Opex limit factor to be applied to average schedule companies subject to Opex limits. NECA includes cost per loop amounts based on this formula for every average schedule study area entitled to an expense adjustment pursuant to section 54.1301, in its Annual Universal Service Fund Submission of Study Results. These cost per loop amounts, when used with the payment algorithm prescribed in section 54.1310 of the Commission's rules, will produce HCL payments to individual companies consistent with the Commission's rules.

Annual payments to average schedule companies under the proposed formula will total approximately $6.45 million payable to 99 average schedule study areas in 2018.[5] These payments reflect the maintenance of the cap on the overall fund size. In comparison, payments in 2017 under the current formula are expected to amount to $6.03 million paid to 92 study areas. The proposed payments represent an increase of $0.42 million, about 7%, compared to current payments.

[5] This amount is prior to application, where applicable, of USAC adjustments for rate floor, the $3000 support limit and the overall budget control mechanism.

Most of this increase is attributed to the change in payment rules that took effect on July 1, 2015.[6] Under the new payment rules, the fund size is controlled with across-the-board payment cuts rather than by adjusting the NACPL to keep total payments under the cap. The new method of controlling the fund has a smaller impact on lower cost companies, including average schedule companies, than the prior method.

It should be noted the average schedule portion of high cost loop funding is small, in part because average schedule companies generally have costs between 115% and 150% of the frozen National Average Cost per Loop (NACPL), and thus receive support compensating for only a minor portion of their loop costs. HCL funding for all rural companies eligible for HCL Support in 2018 will amount to $587 million. If the Commission approves the Cost per Loop formula proposed herein, the $6.45 million in HCL funding made available in 2018 to average schedule companies will represent only 1.1% of the total rural rate-of-return HCL fund. In contrast, there are 163 average schedule study areas, representing 24.9% of the 654 total rural study areas eligible to receive HCL Support.[7]

[6] On December 18, 2014, the FCC issued Report and Order that alters the way the High Cost Loop Support expense adjustments are calculated beginning July 1, 2015. *See Connect America Fund*, WC Docket No. 10-90, *ETC Annual Reports and Certifications*, WC Docket No. 14-58, *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Obsolete ILEC Regulatory Obligations that Inhibit Deployment of Next-Generation Networks*, WC Docket No. 14-192, Report and Order, 29 FCC Rcd. 15644 (2014) ¶¶ 102-114.

[7] A total of 299 cost companies and 139 average schedule companies, receiving ACAM and Alaska Plan support, are not eligible to receive HCLS support in 2018.

B. Procedural Aspects

In preparing proposed formula revisions, NECA receives valuable assistance from the Average Schedule Task Group. This group consists of exchange carrier representatives sponsored by industry associations (*i.e.* NTCA – the Rural Broadband Association, USTelecom, and the WTA – Advocates for Rural Broadband). The Task Group meets several times a year, reviews the steps taken in developing proposed average schedule formulas, advises NECA regarding the development of procedures for administration of the formulas, and assists the NECA Board of Directors in evaluating final proposed formulas. Task Group participation assures average schedule companies are able to participate fully in the development of the average schedule formulas, and also have an opportunity to provide input to NECA regarding the ways in which changes in average schedule company networks can affect settlement formulas.

As it has done in the past for each proposed average schedule modification, NECA will provide a statement to each average schedule company advising it of the impacts of these proposed modifications. This detailed, individual notification includes a brief overview of the new formula as well as the factors contributing to changes in a company's support amount (e.g. changes in loop counts and exchange count data). These notifications assure average schedule companies are aware of proposed changes in the support formula and the impact on their settlements to enable them to plan accordingly. NECA also provides data based on this formula to USAC for USF administration.

Exhibit 1

Proposed High Cost Loop (HCL) Formula for 2018

Average Schedule HCL Formula = Cost per Loop Formula x Opex Limit Factor

Cost per Loop Formula

If Loops per Exchange is less than 1,100, then:

Cost per Loop = $1,135.232165 - $0.478324 x Loops per Exchange

If Loops per Exchange is greater than or equal to 1,100 but less than 2,000, then:

Cost per Loop = $680.811635 - $0.065214 x Loops per Exchange

If Loops per Exchange is greater than or equal to 2,000, then:

Cost per Loop = $550.38.

Opex Limit Factor

If exchanges are not subject to section 54.305 rules,[8] then:

Opex limit factor = 0.999711, otherwise:

Opex limit factor = 1.

[8] Per the *Rate of Return Reform Order*, the Opex limit does not apply to acquired exchanges subject to section 54.305 or to study areas entirely composed of acquired exchanges.

C. Data Used to Develop the Proposed Formula

This section describes the data underlying the proposed HCL formula. Data comes from three sources:

1. USF data submitted by the population of Subset 3 study areas settling on a cost basis.
2. Financial accounts and loop data from a sample of average schedule study areas.
3. Access line and exchange count data from the entire population of average schedule study areas.

Subset 3 cost study areas provided categorized account data used to compute cost categorization factors. These data were collected in connection with the 2016 annual USF Data Submission and are available on the compact discs included with that submission.[9]

Account data and loop information were collected from the average schedule study areas sampled in 2015 and 2016. The 2015 sample provided 2014 financial accounts and loop information for 2015. The 2016 sample provided 2015 financial accounts and loop information for 2016. These data were used to determine Universal Service Fund (USF) loop cost values for each company, as described in the next section.

Loop data and access line counts from the sample were used to calculate a loop count value for each sample average schedule company. In the annual collection of data from sample study areas, NECA collects the following loop information to supplement access line counts: company official lines, off-premise extensions and special access lines. NECA calculated the count of

[9] *See 2016 NECA Universal Service Fund Submission of 2015 Study Results,* National Exchange Carrier Association, Inc. (filed Sept. 30, 2016) (*NECA 2016 USF Data Submission*).

USF loops for each sample study area as the sum of access lines, company official lines and off-premises extensions bridged in the central office.

A loops-per-access line ratio was calculated by dividing sample total USF loops by sample total access lines. Totals used in this calculation were weighted using sample weights. Sample weights are used to expand the sample to a population estimate. A study area's sample weight is the reciprocal of the probability of it being included in the sample. The sample weight measures the count of units in the population a member of the sample represents. For example, a study area with a sample weight of three represents three study areas in the average schedule population. An unbiased estimate of the population is achieved by weighting access line data in this manner. This means an estimate developed by this method is expected to neither overestimate nor underestimate the loops-per-access line ratio.

$$2018\ \textit{Fund Loops per Access Line Ratio} = 1.021426$$

Account and loop data from the sample were projected to December 2016 levels using the methods and growth models developed in NECA's 2016 study and filed in the 2017 NECA Modification of Average Schedules.[10]

[10] The growth rates development method description is included in Section V.B and V.C of NECA's December 2016 settlements formula filing. *See National Exchange Carrier Association, Inc.'s 2017 Modification of Average Schedule Formulas,* WC Docket No. 16-400 (filed Dec. 22, 2016).

Access line[11] data and exchange counts for the population of average schedule study areas were taken from NECA's settlement system for the month of December 2016 based on the June 2017 view. For the purpose of evaluating the proposed formula on each member of the average schedule population, USF loop counts were calculated for each study area using the loops per access line ratio.

$$USF\ \ Loops = Access\ \ Lines \times Loops\ \ per\ \ Access\ \ Line\ \ Ratio$$

USF loops and exchange counts for each average schedule study area are displayed in Appendix C.

D. HCL Cost per Loop Formula

This section describes the derivation of the average schedule Cost per Loop formula and Opex limit factor by:

- Computing categorization factors from Subset 3 cost company data;
- Determining loop costs for sample average schedule study areas using these factors and projected accounts;
- Using sample companies' loop cost and loops per exchange data to derive a statistical regression model; and
- Comparing sample companies' CPL capped by the FCC's Opex limits and actual uncapped CPL to derive an overall Opex limit factor.

[11] Average schedule companies report access line counts to NECA each month based on their billing of End User Common Line (EUCL) charges associated with basic local exchange service. NECA uses the reported December line counts to calculate USF loops for these companies. Loop counts based on these line counts are included in the annual USF data submission filed on October 1st of each year.

These steps are explained in the following four subsections.

1. Calculation of Categorization Factors from Subset 3 Cost Companies

Cost companies submit categorized data to NECA pursuant to section 54.1305 of the Commission's rules.[12] This data was used to compute average USF loop cost categorization factors. Loop cost categorization factors are the cost company fractions of accounts attributed to loop. They were developed from accounts related to Exchange Line Cable and Wire (C&WF) Facilities (Category 1) and Exchange Line Central Office Circuit equipment (Category 4.13).

For example, by computing the ratio of cost company Central Office Equipment (COE) 4.13 investment to total cost company COE investment, NECA developed average categorization factors for Category 4.13 investment. Loop cost categorization factors were developed for each of NECA's five geographical regions, to recognize categorization differences in circuit equipment and cable and wire facilities across regions.

Exhibit 2 summarizes how these categorization factors were computed from cost company data, and how they were used to allocate sample average schedule companies' projected accounts. The first column names the Algorithm line corresponding to instructions in Tab 3 of NECA's Universal Service Fund (USF) 2016 Submission of 2015 Study Results.[13] Algorithm lines AL3, AL4, AL5 and AL6 are categorization factors defined in the USF submission to apportion unseparated cost accounts to loop.

[12] Data was taken from the USF Data submission filed with the Commission on Sept. 30, 2016. *See NECA 2016 USF Data Submission*.

[13] *Id*.

Algorithm lines 13 through 24 are the various cost components of loop cost. Line 25 is the total unseparated loop cost. Line 26 is the cost per loop. Loop cost components are named in the second column in Exhibit 2. The third column is a description of each algorithm line and the last column presents cost categorization formulas used to calculate the value for each sample average schedule company.

Algorithm Lines 23 and 24 in Exhibit 2 use Adjustment Ratios to allocate Total Accumulated Depreciation to C&W Facilities and COE Transmission. This is done to ensure the amount of reserves assigned to loop is in proportion to the amount of investment assigned to loop. The adjustment ratio is calculated as follows:

$$\text{Adjustment Ratio} = \frac{\text{Proportion Of Reserves Allocated To Loop}}{\text{Proportion Of Investment Allocated To Loop}}$$

For example, an adjustment ratio of 0.97420 for Cable & Wire Facilities means the portion of reserves allocated to Loop is 97.42% of the portion of Cable & Wire Facilities investment allocated to Loop. Exhibit 3 describes the derivation of these ratios.

In the *Rate of Return Reform Order* the Commission re-prescribed the 11.25 percent rate of return to 9.75 percent with a 25 basis points reduction per year over a six year transition period. July 1, 2016 was the effective date for the initial transitional rate of 11%. That rule was first implemented in the average schedules CPL formula by an Interim Modification filed by NECA on May 13, 2016,[14] effective July 1, 2016. The second step

[14] *NECA 2016 Further Modification of the Average Schedule Universal Service High Cost Loop Support Formula,* WC Docket No. 05-337.

of the rate of return transition, to 10.75 percent, was effective July 1 2017. The third step of the rate of return transition, to 10.50 percent will be effective July 1, 2018. Because the 2018 HCL support year encompasses two transitional rate of return reductions, NECA applied a blended rate of return of 10.625 percent when calculating algorithm lines 23 and 24 to estimate cost per loop. This represents a 10.75 percent rate of return in effect for the first six months of 2018 and 10.50 percent for the last six months of 2018.

Exhibit 2

Allocation Of Average Schedule Accounts To Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL3		Factor A: C&WF Cat. 1/Total C&WF	Average ratio by region based on cost company data
AL4		Factor B: COE Cat. 4.13/Total COE	Average ratio by region based on cost company data
AL5		Factor C (C&WF Gross Allocator): C&WF Cat. 1/Total Plant in Service	Average ratio by region based on cost company data
AL6		Factor D (COE Gross Allocator): COE Cat. 4.13/Total Plant in Service	Average ratio by region based on cost company data
AL13	C&WF Maintenance	C&WF Maintenance Expense assigned to Cat. 1 C&WF R&B Factor = C&WF R&B Exp. / C&WF Expense	Factor A x (1 - C&WF R&B Factor) x C&WF Expense[15]
AL14	COE Maintenance	COE Maintenance Expense assigned to Cat. 4.13 COE R&B Factor = COE R&B Exp. / COE Expense	Factor B x (1 - COE R&B Factor) x COE Expense
AL15	Network and General Support Expense	Network Support Expense plus General Support Expense assigned to C&WF Cat. 1 and to COE Cat. 4.13 Net. Spt. R&B Factor = Network Spt. R&B Exp. / Network Support Expense Gen. Spt. R&B Factor = General Spt. R&B Exp. / General Support Expense	(Factor C + Factor D) x [(1 - Network Support R&B Factor) x Network Support Expense + (1 - General Support R&B Factor) x General Support Expense]

[15] Amounts underlined are data or calculated values of sample average schedule study areas. Other values are cost company factors.

Exhibit 2

Allocation Of Average Schedule Accounts To Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL16	Network Operations Expense	Network Operations Expense assigned to C&WF Cat. 1 and to COE Category 4.13 Ntwk. Oper. R&B Factor = Ntwk. Oper. R&B Exp. / Ntwk. Oper. Expense	(Factor C + Factor D) x (1 - Network Operations R&B Factor) x Network Operations Expense
AL17	C&WF Depreciation & Amortization Expense	Depreciation & Amortization Expense assigned to C&WF Category 1 Dep. Exp. C&WF Factor = Dep. & Amort. Exp. CWF / C&WF Tangibles -- C&WF = Amort. Tangible Assets -- C&WF / Amort. Tangible Assets Depreciation--Tang. Factor = (Deprec.—Tangibles) / Tangibles	Factor A x [(Depreciation Expense Factor--C&WF x C&WF) + (Depreciation Expense Factor—Tangibles x Tangibles) + (Tangibles Factor -- C&WF x Amort. Tangible Assets)]

Exhibit 2

Allocation Of Average Schedule Accounts To Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL18	COE Depreciation & Amortization Expense	Depreciation & Amortization Expense assigned to COE Category 4.13 Dep. Exp. COE Factor = Dep. & Amort. Exp. COE / COE Tangibles -- COE = Amort. Tangible Assets -- COE / Amort. Tangible Assets Depreciation--Tang. Factor = Deprec.--Tangibles / Tangibles	Factor B x [(Depreciation Expense Factor--COE x COE) + (Depreciation Expense Factor--Tangibles x Tangibles) + (Tangibles Factor -- COE x Amort. Tangible Assets)]
AL19	Corporate Operations Expense	Corporate Operations Expense assigned to C&WF Cat. 1 and to COE Cat. 4.13, limited as per § 54.1308(a)(4)[16]	(Factor C + Factor D) x Corporate Operations Expense

[16] For purposes of the USF Data Submission, Corporate Operations Expenses were subject to the cap imposed by the Commission in its Report and Order and Further Notice of Proposed Rulemaking released November 18, 2011. *Connect America Fund*, WC Docket No. 10-90, *A National Broadband Plan for Our Future*, GN Docket No. 09-51, *et al.*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd. 17663 (2011) ¶¶ 232-233.

Exhibit 2

Allocation Of Average Schedule Accounts To Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL20	Operating Taxes	Operating Taxes assigned to C&WF Cat. 1 and to COE Cat. 4.13 Operating Taxes Factor = Operating Taxes / Total Plant in Service	(Factor C + Factor D) x Operating Taxes Factor x Total Plant in Service
AL21 + AL22	Benefits & Rents	Benefits & Rents other than Corporate Operations Expense assigned to C&WF Cat. 1 and COE Cat. 4.13 C&WF R&B Factor = C&WF R&B Expense / C&WF Expense COE R&B Factor = COE R&B Expense / COE Expense Net. Sup. R&B Factor = Network Sup. R&B Exp. / Network Support Expense Gen. Sup. R&B Factor = General Sup. R&B Exp. / General Support Expense	(Factor C + Factor D) x [(C&WF R&B Factor x C&WF Expenses) + (COE R&B Factor x COE Expenses) + (Net. Sup. R&B Factor x Net. Sup. Expenses) + (General Sup. R&B Factor x General Sup. Expenses) + (Net. Op. R&B Factor x Net. Op. Expenses)]

Exhibit 2

Allocation Of Average Schedule Accounts To Loop Cost Categories

Algorithm Line	Loop Cost Component	Factor Description	Cost Allocation Formula
AL23	C&WF Return	Return Component for C&WF Cat. 1 C&WF Cat. 1 Factor = C&WF Cat. 1 / C&WF Tangibles -- C&WF Factor = Tangibles --C&WF / Tangibles Accum. Dep. Adj. Ratio -- C&WF (See Exhibit 3)	{(C&WF Cat. 1 Factor x C&WF) + (Tangibles Factor--C&WF x Tangibles) + (Factor C x Materials & Supplies) - Factor A x [(Accum. Dep. Adj. Ratio – C&WF x Acc. Dep. x %C&WF of TPIS) + (Net N.C. D. OIT Factor--C&WF x TPIS) + (Tangibles Factor--C&WF x Acc. Amo.-Tangibles)]} x .10625
AL24	COE Return	Return Component for COE Cat. 4.13 COE Cat. 4.13 Factor = COE Cat. 4.13 / COE Tangibles -- COE Factor = Tangibles --COE / Tangibles Accum. Dep. Adj Ratio -- COE. (See Exhibit 3)	{(COE Cat. 4.13 Factor x COE) + (Tangibles Factor--COE x Tangibles) + (Factor D x Materials & Supplies) - Factor B x [(Accum. Dep. Adj Ratio -- COE x Acc. Dep x %COE of TPIS) + (Net N.C. Def. OIT Factor --COE x TPIS) + (Tangibles Factor--COE x Acc. Amo.-Tangibles)]} x .10625
AL25	Loop Costs	Total Unseparated Loop Cost	Sum of AL13 -- AL24
AL26	Cost Per Loop	Study Area Cost per Loop	AL25 Divided by Total Loops

Exhibit 3

Adjustment Ratios for Allocation of Total Accumulated Depreciation

Description	Calculation	Factor name
COE Transmission fraction of TPIS	Sum DL240 / Sum DL160	TPIS % 2230
C&W Facilities fraction of TPIS	Sum DL255 / Sum DL160	TPIS % 2410
COE Transmission fraction of Tot. Acc. Dep.	Sum DL270 / Sum DL190	ACCT 3100 % 2230
C&W Facilities fraction of Tot. Acc. Dep.	Sum DL280 / Sum DL190	ACCT 3100 % 2410
Adjustment Ratio for COE Transmission.	ACCT 3100 % 2230 / TPIS % 2230	Accum. Dep. Adj. Ratio - COE
Adjustment Ratio for C&W Facilities.	ACCT 3100 % 2410 / TPIS % 2410	Accum. Dep. Adj. Ratio - C&WF

DL240 = COE Transmission (Acct 2230)
DL255 = C&WF Total (Acct 2410)
DL160 = Total Plant in Service (TPIS)
DL270 = Accumulated Depreciation - COE Transmission Equipment
DL280 = Accumulated Depreciation - Cable & Wire Facilities
DL190 = Accumulated Depreciation

Exhibit 4 displays the computed values of the loop cost categorization factors from sample cost companies, in each of NECA's five geographical regions.[17]

[17] Regions are defined by groups of states or territories as follows:
REGION 1 (Eastern): CT, DC, DE, MA, MD, ME, NH, NJ, NY, PA, PR, RI, VA, VI, VT, WV
REGION 2 (Southern): AL, FL, GA, KY, LA, MS, NC, SC, TN
REGION 3 (Southwestern): AR, HI, IL, IN, KS, MI, MO, MP, OH, OK, TX, WI
REGION 4 (Western): AK, AS, AZ, CA, CO, GU, ID, MT, NM, NV, OR, UT, WA, WY
REGION 5 (North Central): IA, MN, ND, NE, SD

Exhibit 4

Loop Cost Categorization Factors from Sample Cost Companies

FACTOR	REGION1	REGION2	REGION3	REGION4	REGION5
FACTOR A	0.89217	0.91687	0.87426	0.87438	0.88882
FACTOR B	0.34663	0.48340	0.50713	0.45955	0.45980
FACTOR C	0.49329	0.58660	0.56931	0.53082	0.54949
FACTOR D	0.10596	0.11845	0.11503	0.11387	0.11720
C&WF RENTS & BENEFITS	0.32680	0.32363	0.30328	0.27867	0.26048
COE RENTS & BENEFITS	0.11978	0.12898	0.18133	0.16806	0.17219
TANGIBLES - C&WF	0.00000	0.00000	0.74696	0.02966	0.66795
TANGIBLES - COE TRANSMISSION	0.00000	0.00000	0.00000	0.05503	0.06239
TANGIBLES - COE CATEGORY 4.13	0.00000	0.00000	0.00000	0.05503	0.00000
ACCUMULATED DEPRECIATION - C&WF	0.54473	0.60581	0.61204	0.57420	0.53642
ACCUMULATED DEPRECIATION - COE TRANS.	0.19405	0.23887	0.22374	0.22812	0.27011
NET NON-CURR DEF FIT-C&WF- Commercial Comp.	0.02723	0.02173	0.02837	0.02033	0.02662
NET NON-CURR DEF FIT-C&WF- Coops	0.00000	0.00000	0.00000	0.00000	0.00000
NET NON-CURR DEF FIT-COE TRANS.- Comm Comp.	0.00942	0.00771	0.00767	0.00839	0.00948
NET NON-CURR DEF FIT-COE TRANS.- Coops	0.00000	0.00000	0.00000	0.00000	0.00000
NETWORK SUPPORT RENTS & BENEFITS	0.04199	0.19990	0.14543	0.32948	0.21411
GENERAL SUPPORT RENTS & BENEFITS	0.18310	0.16575	0.23320	0.32715	0.19129
NETWORK OPERATIONS BENEFITS	0.16689	0.19862	0.23420	0.26391	0.23380
DEPRECIATION EXPENSE - C&WF	0.03863	0.03985	0.03736	0.03822	0.03959
DEPRECIATION EXPENSE -COE TRANSMISSION	0.06055	0.07003	0.07001	0.06974	0.07863
DEPRECIATION - TANGIBLES	0.00000	0.00000	0.01877	0.02319	0.00000
ACCUM. DEP. ADJ. RATIO - COE	0.99283	1.14957	1.19124	1.12368	1.25432
ACCUM. DEP. ADJ. RATIO - C&WF	0.97420	0.93415	0.91797	0.92177	0.84533
OPERATING INCOME TAX - Cooperatives	0.00515	0.00438	0.00454	0.00709	0.00349
OPERATING INCOME TAX-Commercial Companies	0.00491	0.01505	0.01495	0.01194	0.00743

2. Calculation of Loop Cost for Sample Average Schedule Companies

NECA calculated loop costs for sample average schedule companies consistent with the Part 54 rules that apply to cost companies. Accordingly, for each average schedule study area in the sample, the loop cost is the accumulation of components of accounts assigned to loop. Costs assigned to the loop include Cable & Wire Facilities investment in Category 1, COE investment in Category 4.13 and other accounts assigned proportionately based on these accounts. The portion of costs in accounts assigned to loop were determined using the allocation ratios derived from cost companies.

NECA applied the cost categorization factors shown in Exhibit 4 to uncategorized projected accounts from sample average schedule study areas to produce unseparated average schedule category-level loop costs. Section 54.1308 of the Commission's rules describes various unseparated accounts making up a study area's total unseparated loop costs. Following this method, the unseparated loop cost for each sample average schedule study area was determined by summing the following categories related to COE Category 4.13 and C&WF Category 1 plant, as follows.

Loop Cost = Maintenance Expense + Network & General Support Expenses
+ Network Operations Expense + Depreciation & Amortization Expense
+ Corporate Operations Expense + Operating Taxes + Benefits Expense
+ Rent Expense + Return on Investment

Exhibit 5 presents the results of loop cost calculations for the average schedule sample.

These calculated cost per loop amounts, when used with the payment algorithm

prescribed in section 54.1310 of the Commission's rules, produce $18.2 million in uncapped USF expense adjustments sample companies would be entitled to receive if they were to conduct cost studies.

NECA estimated the amount of uncapped expense adjustment that would be calculated for the entire population of average schedule companies based on individual cost studies, by using the sample weights described in Section C. Based on this calculation, the total uncapped expense adjustment amount for the entire population of average schedule companies based on cost studies would be $21.4 million in 2018.

Exhibit 5

Allocation of Unseparated Total Accounts to Loop
Weighted Total Data from the Average Schedule Sample

HCL Algorithm Line	Cost Category	Calculation Method	Total Account Per Loop	Avg Loop %	Loop Cost Per Loop
1	C&WF Category 1	Cost Company Factor	3,796.00	0.8962	3,402.10
2	COE Category 4.13	Cost Company Factor	1,985.32	0.4609	915.00
3	Factor A	% C&WF Cat 1 of Total C&WF	3,796.92	0.8960	3,402.10
4	Factor B	% COE Cat 4.13 of Total COE	1,985.32	0.4609	915.00
5	Factor C	% C&WF Cat 1 of TPIS	6,654.34	0.5113	3,402.10
6	Factor D	% COE Cat 4.13 of TPIS	6,654.34	0.1375	915.00
7	Materials & Supplies for CWF Cat 1	Factor C x M&S	61.18	0.5232	32.01
8	Materials & Supplies for COE Cat 4.13	Factor D x M&S	61.18	0.1214	7.42
9	Reserves for CWF Cat 1	Factor A x Reserves	4,888.96	0.4600	2,248.73
10	Reserves for COE Cat 4.13	Factor B x Reserves	4,888.96	0.1713	837.28
11	Factor E	% Net C&WF Cat 1 of Net TPIS	1,829.35	0.6480	1,185.38
12	Factor F	% Net COE Cat 4.13 of Net TPIS	1,829.35	0.0465	85.15
13	Maintenance of C&WF Cat 1	Factor A x (Maintenance - R & B)	101.31	0.6275	63.57
14	Maintenance of COE Cat 4.13	Factor B x (Maintenance - R & B)	87.24	0.3601	31.42
15a	Network Support Assigned to Loop	(Fact C + Fact D) x (Net Sup Exp - R&B)	6.61	0.5152	3.41
15b	General Support Assigned to Loop	(Fact C + Fact D) x (Gen Sup Exp - R&B)	47.36	0.5163	24.45
16	Network Operations Assigned to Loop	(Fact C + Fact D) x (Net Ops Exp - R&B)	71.55	0.5090	36.42
17	Depreciation of C&WF Cat 1	C&WF Cat 1 x C&WF Deprec Rate	3,402.10	0.0392	133.47
18	Depreciation of COE Cat 4.13	COE Cat 4.13 x COE Deprec Rate	915.00	0.0657	60.07
19	Corporate Oper. Exp. Assigned to Loop	(Fact C + Fact D) * Corp. Oper. Exp.	194.30	0.6288	122.18
20	Operating Taxes Assigned to Loop	(Factor C + Factor D) x Oper Taxes	57.98	0.6471	37.52
21	Benefits in Oper. Exp. Assigned to Loop	(Fact C + Fact D) x (Benefits - Corp Ops)	242.52	0.2103	51.00
22	Rents in Oper Exp Assigned to Loop	(Fact C + Fact D) x (Rents - Corp Ops)	242.52	0.0430	10.42
23	Return on C&WF Cat 1	.10625 x Net CWF Cat 1	1,185.38	0.1063	125.95
24	Return on COE Cat 4.13	.10625 x Net COE Cat 4.13	85.15	0.1063	9.05
25	Total Loop Cost	Sum 13 Thru 24	6,639.01	0.1068	708.94

3. Cost per Loop Formula for 2018

This study develops a formula simulating the cost per loop data of sample companies, which is used to compute loop costs as the basis of expense adjustments for all average schedule companies. The underlying basis of the formula is the comparison of cost per loop data obtained from average schedule sample companies to their ratios of loops per exchange. Based on the relationship of these variables, a statistical model is developed and is used to compute HCL cost per loop for each member of the total population of average schedule companies.

NECA used cost per loop data of sample average schedule study areas to derive a statistical regression model. This model form was first presented in the 2002 NECA Modification of Average Schedule Universal Service Formulas, filed on October 1, 2001, and approved by the Commission in its July 30, 2002 Order.[18] The model relating cost per loop to loops per exchange in this year's study produces statistically significant coefficients. NECA proposes use of this model in 2018.

In Appendix B of this filing NECA presents HCL cost per loop data for sample average schedule study areas. This section explains the use of that data to develop a statistical model for calculating CPL values for each study area in the average schedule population.

[18] *See Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *National Exchange Carrier Association, Inc. Proposed 2002 Modification of Average Schedule Formulas*, Order, 17 FCC Rcd. 14236 (2002).

This model uses the outlier accommodation method for regression, first introduced in NECA's December 31, 1998 average schedule filing[19] and approved by the Commission.[20] The threshold used in this calculation was equal to three standard deviations of the residuals. The outlier accommodation method uses weighted linear regression, with regression weights defined in two steps. First residuals and DFFITS values for each observation are determined by an unweighted linear regression. Then regression weights are calculated using these values.

If Abs(residual) <= threshold, then regression $\text{weight}_i = 1$

Else regression $\text{weight}_i = \left(\frac{C/2}{DFFITS_i} \right)^2$, where $C = 2\sqrt{\frac{P+1}{N-P-1}}$

P = number of model coefficients, N = number of observations

The model relates the CPL variable (the dependent variable) to the loops per exchange variable using constrained linear regression. The model reflects the CPL trend of sample companies, which show relatively higher costs associated with lower values of loops per exchange. This trend decreases at one rate for the smallest study areas, then decreases at slower rates for the group of midsize average schedule study areas, and finally levels off for the larger study areas.

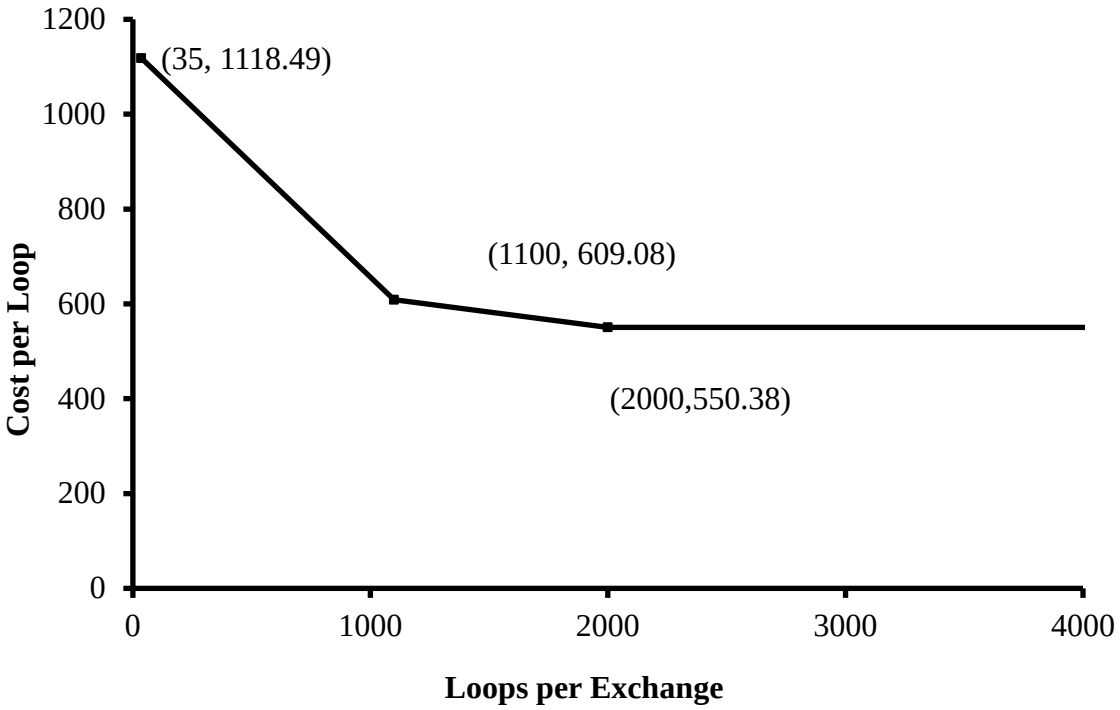
[19] *See 1999 NECA Modifications of Average Schedules*, National Exchange Carrier Association, Inc. (filed Dec. 31, 1998).

[20] *See National Exchange Carrier Association, Inc., Proposed Modifications to the 1999-2000 Interstate Average Schedule Formulas*, ASD 99-18, Order, 14 FCC Rcd. 9803 (1999).

The model consists of a set of connected lines, each corresponding to a designated range of loops per exchange. In this year's study, as in last year's study, the best fitting model supported three distinct ranges of loops per exchange values delimited by two breakpoints. NECA selected the formula breakpoints to assure support amounts would be accurately distributed across study areas in all size ranges. NECA tested sets of breakpoints and regression coefficients iteratively to determine the combination with the best fit to the data, resulting in breakpoints of 1,100 and 2,000 loops per exchange.

Exhibit 6

Cost Per Loop Model



To fit the Cost per Loop formula to sample company data, NECA first calculated the overall average CPL of study areas with loops per exchange exceeding 2,000, using the standard weighted ratio estimation method. This method produced a formula Cost per Loop for this group of study areas of $550.38. This CPL is a good statistical representation of the data for these study areas, which show a consistently flat trend as relates to loops per exchange.

$$Cost\ Per\ Loop\ (a_3) = \frac{\sum_{ECs > (2000\ LPE)} SampleWeight_i \cdot OutlierWeight_i \cdot Cost\ Per\ Loop_i \cdot Loops_i}{\sum_{ECs > (2000\ LPE)} SampleWeight_i \cdot OutlierWeight_i \cdot Loops_i}$$

Next, NECA used linear regression to solve for other parameters of the model. The regression model is a sequence of three connected straight lines specified as follows (CPL designates the study area's cost per loop; LPE designates each study area's loops per exchange, and BP designates breakpoint).

$$CPL_i = [a_1 + b_1\ LPE_i]\delta_{1i} + [a_2 + b_2\ LPE_i]\delta_{2i} + a_3\ \delta_{3i}$$

where: $\delta_{1i} = 1$, *if* $(LPE_i <= BP_1)$, *and* $\delta_{1i} = 0$ *otherwise.*

$\delta_{2i} = 1$, *if* $(BP_1 < LPE_i <= BP_2)$, *and* $\delta_{2i} = 0$ *otherwise.*

$\delta_{3i} = 1$, *if* $(LPE_i > BP_2)$ *and* $\delta_{3i} = 0$ *otherwise.*

The model is constrained at the breakpoints, BP_1 and BP_2, to insure connectivity of the line segments, as follows:

$$a_1 + b_1 \cdot BP_1 = a_2 + b_2 \cdot BP_1$$

$$a_2 + b_2 \cdot BP_2 = a_3 = \$550.38.$$

The resulting coefficients are calculated using standard linear regression methods, including outlier weighting as described earlier in this section. This model fits the CPL data most accurately, and reflects relationships between loop cost and loops per exchange.

4. Operating Expense Limit Factor for 2018

In the *Rate of Return Reform Order*,[21] the Commission adopted limits on operating expenses (Opex) to be recovered through HCL support with January 1, 2017 as effective date. Consistent with the rules, NECA developed an Opex limit factor for average schedule companies to be applied to companies' formula-estimated CPLs.

NECA calculated the Opex limit factor using accounting data of sample average schedule companies. For each sample company, the sum of company's total accounts used to determine the operating expenses eligible for support was compared to the Opex limit generated by the Commission's regression model. If the sum of actual eligible operating costs exceeded the FCC's Opex limit, operating cost was capped at the limit level, and the limit was applied proportionately to all accounts used to determine eligible operating expenses.

[21] *Rate of Return Reform Order* ¶¶ 95-104.

In 2017, the first year in which the Opex cap is to be implemented Opex amounts were limited by one-half of the required reduction.[22] In 2018 the full required limit is applied to Opex amounts. In this year's study, there are three out of 204 sample average schedule companies affected by the Opex limitation.

Using the limited Opex, NECA calculated each sample company CPL and USF revenue requirement (RRQ), calculated as CPL x loops. By comparing the sample weighted USF RRQ based on limited operating expenses to the sample weighted USF RRQ based on unlimited operating expenses for companies subject to Opex limits, NECA determined the proportionate share that the effect of the Opex limits would have on the sample average schedule companies. The Opex limit factor calculation is shown below.

Opex limit factor = *Total Weighted Opex Limit Adjusted USF RRQ /*
Total Weighted Actual USF RRQ

Opex limit factor[23] = 0.999711

The proposed Cost per Loop formula and Opex limit factor are shown in Exhibit 1. Using the proposed formula, loops per exchange data, as described in Section C of this filing, and Opex limit factor, NECA determined proposed CPL values for each average schedule study area. The proposed CPL values are higher than the current formula CPL values for study areas with loops per exchange greater than 198 that are currently receiving payments.

[22] *See id.*¶ 103.

[23] For companies subject to part 54.305 rules Opex limit factor = 1.

E. HCL Payments for the Population of Average Schedule Companies

In 2018, actual HCL payments will be determined using each company's proposed CPL value, the expense adjustment algorithm, the frozen NACPL value, and a pro-rata adjustment factor calculated according to the Commission's rules to meet the fund cap. Following is a discussion of the effects of these calculations.

According to the Commission's rule 54.1310 NECA calculates expense adjustments in two steps. First, each company's CPL is compared to the frozen NACPL of $647.87 to calculate its expense adjustment by applying the USF payment algorithm as specified in 54.1310(a)(1) and (2) . Second, if the expense adjustments for all study areas (cost and average schedules) exceed the HCL cap, each study area's expense adjustment from the first step is reduced by the ratio of the HCL support cap to the aggregate expense adjustment for all study areas. This ratio, referred to here as the pro–rata adjustment factor, is estimated to be 0.795042.[24]

Although average schedule companies would receive $8.1[25] million based on the proposed formula and the frozen NACPL payment calculation, the capping of the fund is expected to limit this payment to $6.45 million through the application of the pro-rata adjustment factor.[26] Because this view does not reflect quarterly updates to HCL data submissions to be filed with the FCC after October 1 of this year, as permitted by section 54.1306 of the Commission's rules, decreases in

[24] This is NECA's initial estimate of the pro-rata adjustment factor for 2018, based on data reported to date. This factor is subject to change based on quarterly updates and other data changes.

[25] Opex limitation impact on average schedule companies' total 2018 HCL support payments is reduction of 0.18% (or -$14,664).

[26] *See also* note 4 regarding additional USAC adjustments not reflected in this calculation.

the pro-rata adjustment factor can be expected which will produce lower payments for all rate of return companies, including average schedule companies.

Average schedule companies that are expected to receive payments in 2018 are those with loops per exchange less than 808. While the cost per loop for most average schedule companies currently receiving payments will increase as a result of the proposed formula, thirty nine study area will realize total payment reductions due to lower proposed formula, or a significant change in loop counts, or lower estimated 2018 pro-rata adjustment factor.

F. Effects of Changes on Average Schedule Companies

This section provides a summary comparison of proposed payments of $6.45 million and current payments of $6.03 million, categorized by line size group and by percent change group. Exhibit 7 summarizes changes in monthly payments by study area size.

Exhibit 7

Proposed Monthly HCL Payment Changes By Loop Size

Access Line Size Group	Count of Study Areas	2017 USF Payments (current)	2018 Proposed Payment (Fund Cap Applied)	Monthly Change per Loop	Percent Difference
0 to 500	40	$114,196	$113,016	-$0.10	-1.03%
500 to 1000	45	$131,986	$143,944	$0.36	9.06%
1000 to 2500	41	$134,462	$139,502	$0.09	3.75%
2500 to 5000	20	$121,657	$140,901	$0.27	15.82%
5000 to 10000	5	$0	$0	$0.00	0.00%
10000 to 20000	9	$0	$0	$0.00	0.00%
Over 20000	3	$0	$0	$0.00	0.00%

Exhibit 8 summarizes the monthly changes in expense adjustments by percent change bands.

Exhibit 8

Proposed Monthly HCL Payment Changes By Percent Change Bands

Percent Change Group	Count of Study Areas	2017 USF Payments (current)	2018 Proposed Payment (Fund Cap Applied)	Monthly Change per Loop
-30% to -20%	2	$4,722	$3,593	-$1.42
-20% to -10%	3	$4,164	$3,653	-$2.31
-10% to -5%	8	$29,097	$27,049	-$0.94
-5% to -2%	13	$101,176	$97,798	-$0.43
-2% to 0%	13	$68,774	$67,898	-$0.14
0% to 2%	70	$73,793	$74,622	$0.00
2% to 5%	10	$55,135	$57,033	$0.25
5% to 10%	12	$77,434	$83,092	$0.44
10% to 20%	6	$40,410	$47,389	$0.80
20% to 30%	5	$17,331	$21,531	$0.73
30% to 40%	3	$5,830	$7,832	$0.85
40% to 50%	4	$15,293	$22,479	$1.11
50% to 60%	2	$3,234	$4,875	$1.31
60% to 70%	3	$4,167	$6,896	$1.43
100%	7	$0	$7,788	$0.71
100% to 200%	2	$1,741	$3,835	$1.55

G. Conclusion

The proposed HCL formula shown in Exhibit 1 herein conforms to FCC USF reporting rules, produces payments consistent with those experienced by similarly situated cost companies as required by the Commission's Part 69 rules, and yields reasonable changes in payments to average schedule companies. The Commission should approve this formula to go into effect on January 1, 2018.

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
1	100005	COBBOSSEECONTEE TEL. CO.	
2	100019	OXFORD COUNTY TEL. & TELE. CO.	1
3	100020	PINE TREE TELEPHONE LLC	
4	100022	SACO RIVER TELEPHONE LLC	
5	120042	DIXVILLE TEL. CO.	1
6	120043	DUNBARTON TEL. CO.	1
7	140053	FRANKLIN TEL. CO.-VT	1
8	140064	SHOREHAM TELEPHONE LLC	1
9	150076	CASSADAGA TEL. CORP.	1
10	150125	STATE TEL. CO.	1
11	170156	THE CITIZENS TELEPHONE COMPANY OF KECKSBURG	1
12	170171	HICKORY TEL. CO.	1
13	170175	IRONTON TEL. CO.	1
14	170191	THE NORTH-EASTERN PENNSYLVANIA TELEPHONE CO.	
15	170195	ARMSTRONG TEL. CO. NORTH	1
16	170196	PALMERTON TELEPHONE COMPANY	1
17	170197	PENNSYLVANIA TEL. CO.	1
18	170200	PYMATUNING IND. TEL. CO.	
19	170205	SOUTH CANAAN TEL. CO.	1
20	170210	VENUS TEL. CORP.	1
21	170277	WEST SIDE TEL. CO.-PA	
22	190220	BURKE'S GARDEN TEL. CO., INC.	1
23	190225	CITIZENS TEL. COOP.-VA	
24	190226	LUMOS TELEPHONE INC.	
25	190237	HIGHLAND TEL. COOP.-VA	
26	190238	MGW TELEPHONE COMPANY, INC.	
27	190239	NEW HOPE TELEPHONE COOPERATIVE	1
28	190243	PEMBROKE TEL. COOP.	1
29	190250	SHENANDOAH TEL. CO.	1
30	197251	SHENANDOAH TELEPHONE COMPANY - NR	1
31	200258	WAR TELEPHONE LLC	
32	220324	VALLEY TELEPHONE CO., LLC	1
33	220380	PROGRESSIVE RURAL TEL. COOP., INC.	1
34	220389	TRENTON TEL. CO.	1
35	230478	ELLERBE TEL. CO.	1
36	230491	NORTH STATE TEL. CO.-NC dba NORTH STATE COMM.	1
37	230494	PINEVILLE TEL. CO.	1
38	230496	RANDOLPH TEL. MEMB. CORP. DBA RANDOLPH COMM.	1
39	230497	SURRY TELEPHONE MEMBERSHIP CORPORATION	1
40	230500	SERVICE TEL. CO.	1
41	230501	SKYLINE TEL. MEMB. CORP.	1
42	230503	SURRY TELEPHONE MEMBERSHIP CORPORATION	1
43	230505	TRI-COUNTY TEL. MEMB. CORP.-NC	1
44	230511	YADKIN VALLEY TEL. MEMB. CORP.	1
45	240515	CHESNEE TEL. CO.	1
46	240516	CHESTER TEL. CO.-SC	1

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
47	240532	LOCKHART TEL. CO., INC.	1
48	240535	NORWAY TEL. CO., INC.	
49	240541	RIDGEWAY TEL. CO., INC.	1
50	240546	SANDHILL TEL. COOP., INC.	1
51	250283	BRINDLEE MOUNTAIN TELEPHONE LLC	
52	250285	CASTLEBERRY TEL. CO., INC.	1
53	250311	OAKMAN TEL. CO., INC.	
54	250312	OTELCO TELEPHONE LLC	
55	260398	BRANDENBURG TEL. CO., INC.	1
56	260408	GEARHEART COMM. DBA COALFIELDS TEL. CO.	1
57	260419	THACKER/GRIGSBY TEL. CO., INC.	1
58	270428	DELCAMBRE TEL. CO.	1
59	280451	DECATUR TEL. CO., INC.-MS	1
60	280467	SMITHVILLE TEL. CO.	
61	287449	MYRTLE TEL. CO., INC.	
62	290553	BEN LOMAND RURAL TEL. COOP., INC.	1
63	290554	BLEDSOE TEL. COOP.	1
64	290565	HIGHLAND TEL. COOP., INC.-TN	1
65	290570	LORETTO TEL. CO., INC.	1
66	290598	WEST KENTUCKY RURAL TELEPHONE COOP. CORP.-TN	1
67	300585	ARCADIA TEL. CO.	
68	300588	AYERSVILLE TEL. CO.	1
69	300589	BASCOM MUTUAL TEL. CO.	1
70	300591	BUCKLAND TELEPHONE COMPANY	1
71	300609	DOYLESTOWN TEL. CO.	1
72	300614	FORT JENNINGS TEL. CO.	1
73	300619	GLANDORF TEL. CO., INC.	1
74	300625	KALIDA TEL. CO., INC.	1
75	300633	MIDDLE POINT HOME TEL. CO.	
76	300639	THE NEW KNOXVILLE TEL. CO.	1
77	300645	OAKWOOD TEL. CO.	
78	300650	THE OTTOVILLE MUTUAL TEL. CO.	1
79	300651	PATTERSONVILLE TEL. CO.-OH	
80	300654	RIDGEVILLE TEL. CO.	
81	300656	SHERWOOD MUTUAL TEL. ASSOC.	1
82	300659	TELEPHONE SERVICE CO.	
83	300662	VANLUE TEL. CO.	
84	300663	VAUGHNSVILLE TEL. CO., INC.	1
85	300664	WABASH MUTUAL TEL. CO.	1
86	310675	BARAGA TELEPHONE COMPANY	1
87	310676	BARRY COUNTY TEL. CO.	1
88	310678	BLANCHARD TELEPHONE CO.	1
89	310688	CLIMAX TEL. CO.	1
90	310694	FARMERS MUT. OF CHAPIN DBA CHAPIN TEL. CO.	1
91	310703	KALEVA TEL. CO.	1
92	310725	SAND CREEK TEL. CO.	

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
93	310735	WESTPHALIA TEL. CO.	
94	320751	CITIZENS TEL. CORP.-WARREN	1
95	320756	CRAIGVILLE TEL. CO., INC.	1
96	320771	GEETINGSVILLE TEL. CO., INC.	1
97	320778	HOME TEL. CO., INC.	
98	320792	MULBERRY COOP. TEL. CO., INC.	1
99	320809	COMM. CORP. OF SOUTHERN INDIANA	
100	320816	S & W TEL. CO., INC.	
101	320826	SWAYZEE TEL. CO., INC.	1
102	320827	SWEETSER RURAL TEL. CO., INC.	1
103	320837	WEST POINT TEL. CO., INC.	
104	320839	YEOMAN TEL. CO., INC.	1
105	330842	AMERY TELCOM, INC.	
106	330843	AMHERST TEL. CO.	1
107	330846	BALDWIN TELCOM., INC.	1
108	330847	BELMONT TEL. CO.	1
109	330848	BERGEN TEL. CO.	1
110	330865	CLEAR LAKE TEL. CO., INC.-WI	
111	330868	COON VALLEY FARMERS TEL. CO., INC.	
112	330872	CUBA CITY TEL. EXCH. CO.	1
113	330875	DICKEYVILLE TEL. CO.	
114	330879	FARMERS IND. TEL. CO.-WI	
115	330880	FARMERS TEL. CO.-WI	
116	330889	HAGER TELECOM, INC.	1
117	330896	LAKEFIELD TELEPHONE COMPANY	1
118	330905	MANAWA TEL. CO.	
119	330914	EASTCOAST TELECOM, INC.	
120	330925	BAYLAND TELEPHONE, LLC	1
121	330938	NORTHEAST TEL. CO.	1
122	330946	SHARON TEL. CO.	1
123	330951	SOMERSET TEL. CO., INC.	
124	340983	CAMBRIDGE TEL. CO.-IL	1
125	340990	CLARKSVILLE MUTUAL TEL. CO.	1
126	340993	CROSSVILLE TEL. CO.	
127	341016	GENESEO TEL. CO.	
128	341017	GLASFORD TEL. CO.	
129	341021	THE GRANDVIEW MUTUAL TEL. CO.	1
130	341024	HAMILTON COUNTY TELEPHONE CO-OP	
131	341029	HENRY COUNTY TEL. CO.	
132	341041	KINSMAN MUTUAL TEL. CO.	1
133	341046	LEONORE MUTUAL TEL. CO.	1
134	341050	MARSEILLES TEL. CO. OF MARS.	1
135	341053	METAMORA TEL. CO.	1
136	341062	NEW WINDSOR TEL. CO.	1
137	341075	REYNOLDS TEL. CO.	
138	341086	TONICA TEL. CO.	

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
139	341087	VIOLA HOME TEL. CO.	1
140	341092	STELLE TEL. CO.	
141	351097	ANDREW TEL. CO., INC.	
142	351098	ARCADIA TEL. COOP.	1
143	351101	ATKINS TEL. CO.	1
144	351107	BALDWIN-NASHVILLE TEL. CO., INC.	1
145	351108	BARNES CITY COOP. TEL. CO.	
146	351112	BREDA TEL. CORPORATION	
147	351113	BROOKLYN MUTUAL TEL. CO.	1
148	351114	TITONKA TEL. CO. DBA TITONKA-BURT COMM (BURT)	
149	351115	BUTLER-BREMER MUT. TEL. CO.	
150	351119	CASEY MUTUAL TEL. CO.	
151	351121	CENTER JUNCTION TEL. CO., INC.	
152	351125	CENTRAL SCOTT TEL.	
153	351133	C-M-L TEL. COOP. ASSN.	1
154	351136	COON CREEK TEL. CO.	
155	351137	COON VALLEY COOP. TEL. ASSN., INC.	
156	351139	COOP. TEL. CO.	
157	351141	CORN BELT TEL. CO.	1
158	351146	CUMBERLAND TEL. CO.	
159	351147	DANVILLE MUT. TEL. CO.	
160	351149	FARMERS MUTUAL COOPERATIVE TEL CO (DEFIANCE)	
161	351150	DIXON ACQUISITION, LLC	
162	351153	DUNKERTON TEL. COOP., INC.	1
163	351157	ELLSWORTH COOP. TEL. ASSN.	1
164	351162	FARMERS COOP. TEL. CO.-DYSART	1
165	351166	FARMERS & MERCHANTS MUTUAL TEL. CO.	1
166	351168	FARMERS MUTUAL COOP TEL CO- HARLAN	
167	351171	FARMERS MUTUAL TEL. CO.-JESUP	
168	351173	FARMERS MUTUAL TEL. COOP.-SHELLSBURG	1
169	351175	FARMERS TEL. CO.-BATAVIA	1
170	351176	FARMERS TEL. CO.-ESSEX	
171	351179	FENTON COOP. TEL. CO.	
172	351188	GOLDFIELD TEL. CO.	1
173	351189	RIVER VALLEY TELECOMMUNICATIONS COOP.	1
174	351191	GRAND MOUND COOP. TEL. ASSN.	1
175	351199	HAWKEYE TEL. CO.	1
176	351202	HOSPERS TEL. EXCHANGE, INC.	1
177	351205	HUXLEY COMMUNICATIONS COOPERATIVE	1
178	351212	JEFFERSON TEL. CO.-IA	
179	351213	JORDAN SOLDIER VALLEY TELEPHONE COMPANY	
180	351222	LA MOTTE TEL. CO.	
181	351228	LONE ROCK COOP. TEL. CO.	
182	351232	LYNNVILLE TELEPHONE COMPANY	1
183	351235	FARMERS MUTUAL COOPERATIVE TEL CO (MANILLA)	
184	351238	MARTELLE COOP. TEL. ASSN.	

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
185	351239	MASSENA TEL. CO.	
186	351241	MECHANICSVILLE TEL. CO.	
187	351242	MILES COOP. TEL. ASSN.	1
188	351246	MINERVA VALLEY TEL. CO., INC.	1
189	351247	MODERN COOP. TEL. CO.	
190	351250	MUTUAL TEL. CO. OF MORNING SUN	
191	351257	NORTH ENGLISH COOP. TEL. CO.	
192	351260	NORTHWEST IOWA TELEPHONE, LLC	
193	351261	NORTHWEST TEL. COOP.	
194	351264	OLIN TEL. CO., INC.	
195	351265	ONSLOW COOP. TEL. ASSN.	
196	351266	ORAN MUTUAL TEL. CO.	
197	351269	PALO COOPERATIVE TELEPHONE ASSOCIATION	1
198	351270	PALMER MUTUAL TEL. CO.	1
199	351273	PEOPLES TEL. CO.-IA	
200	351275	PRAIRIEBURG TEL. CO., INC.	1
201	351278	READLYN TEL. CO.	1
202	351282	ROCKWELL COOP. TEL. ASSN.	
203	351283	ROYAL TEL. CO.	1
204	351285	SAC COUNTY MUTUAL TEL. CO.	
205	351291	SCHALLER TEL. CO.	
206	351292	SEARSBORO TEL. CO.	1
207	351293	SHARON TEL. CO.	1
208	351301	SOUTHWEST TEL. EXCH., INC.	1
209	351302	SPRINGVILLE COOP. TEL. ASSN.	1
210	351306	SULLY TEL. ASSOC.	1
211	351307	SUPERIOR TEL. COOP.	
212	351308	TEMPLETON TEL. CO.	
213	351309	TERRIL TELEPHONE COOPERATIVE	
214	351310	TITONKA TEL. CO. DBA TITONKA-BURT COMM	
215	351319	VAN BUREN TEL. CO., INC.	
216	351320	VAN HORNE COOP. TEL. CO.	1
217	351322	VENTURA TEL. CO., INC.	1
218	351331	WEST IOWA TEL. CO.	1
219	351334	WESTERN IOWA TEL. ASSN.	
220	351335	WESTSIDE INDP. TEL. CO.	
221	351336	WILTON TEL. CO.	1
222	351342	WOOLSTOCK MUT. TEL. ASSN.	
223	351344	PRAIRIE TEL. CO., INC.	
224	351424	MABEL COOP. TEL. CO.-IA	
225	361348	WILDERNESS VALLEY TELEPHONE COMPANY, INC.	
226	361353	CITY OF BARNESVILLE TEL. CO.	1
227	361356	BENTON COOP. TEL. CO.	1
228	361365	CALLAWAY TEL. CO.	
229	361372	CLEMENTS TEL. CO.	
230	361390	FEDERATED TEL. COOP.	1

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
231	361396	GARDONVILLE COOP. TEL. ASSN.	1
232	361401	HALSTAD TEL. CO.	1
233	361403	FEDERATED TELEPHONE COOPERATIVE	1
234	361404	HARMONY TEL. CO.	1
235	361408	HOME TEL. CO.-MN	
236	361409	HUTCHINSON TELEPHONE COMPANY	
237	361413	MID STATE TEL. CO. DBA KMP TEL. CO.	
238	361423	RUNESTONE TELEPHONE ASSOCIATION	1
239	361424	MABEL COOPERATIVE TELEPHONE CO.- MN	
240	361430	MELROSE TELEPHONE COMPANY	
241	361431	MIDWEST TEL. CO.	
242	361439	MINNESOTA VALLEY TEL. CO. INC.	
243	361440	CANNON VALLEY TELECOM, INC.	
244	361443	LORETEL SYSTEMS, INC.	
245	361450	PARK REGION MUTUAL TEL. CO.	
246	361472	REDWOOD COUNTY TEL. CO.	
247	361474	ROTHSAY TELEPHONE COMPANY INC.	
248	361475	RUNESTONE TEL. ASSN.	1
249	361476	SACRED HEART TEL. CO.	
250	361479	SCOTT RICE TEL. CO. dba INTEGRA TELECOM	1
251	361487	STARBUCK TEL. CO.	
252	361495	VALLEY TEL. CO.-MN	
253	361499	TRI-CO TECHNOLOGIES, LLC DBA CROSSLAKE COMM.	1
254	361500	NORTHERN TELEPHONE COMPANY OF MN	
255	361502	WESTERN TELEPHONE COMPANY	
256	361505	WIKSTROM TELEPHONE COMPANY INC.	
257	361508	WINTHROP TEL. CO.	
258	361512	WOLVERTON TELEPHONE COMPANY	1
259	361515	ZUMBROTA TELEPHONE COMPANY	
260	361654	INTERSTATE TELECOMMUNICATIONS COOP., INC.-MN	
261	371530	CONSOLIDATED TELCO, INC.	
262	371555	HAMILTON TELEPHONE COMPANY	1
263	371563	HOOPER TELEPHONE COMPANY	
264	371581	PIERCE TELEPHONE COMPANY	
265	371590	SODTOWN TEL. CO.	1
266	381509	WOLVERTON TEL. CO.	1
267	381601	ABSARAKA COOP TELEPHONE CO.	
268	381614	POLAR COMMUNICATIONS MUTUAL AID CORP (A)	1
269	381615	GRIGGS COUNTY TELEPHONE COMPANY	1
270	381622	GRIGGS COUNTY TEL. CO. (MOORE&LIBERTY)	1
271	381638	MIDSTATE COMMUNICATIONS INC.	1
272	391640	GOLDEN WEST TELECOM COOP (ARMOUR)	1
273	391649	BERESFORD MUNICIPAL TEL. CO.	1
274	391650	CITY OF BROOKINGS MUNICIPAL TEL. DEPT.	1
275	391653	CITY OF FAITH MUNICIPAL TEL CO	1
276	391660	FORT RANDALL TEL. CO. DBA MT. RUSHMORE TEL CO	

Appendix A
2017 Average Schedule USF Study
Study Area Code / Study Area Name

Obs	Study Area Code	Study Area Name	Eligible for HCLS (Yes=1)
277	391664	JAMES VALLEY COOPERATIVE TELEPHONE COMPANY	
278	391671	WEST RIVER TELECOMMUNICATIONS COOP.(MOBRIDGE)	1
279	391682	TRIOTEL COMMUNICATIONS, INC. (TRI-COUNTY)	1
280	401710	MAGAZINE TELEPHONE COMPANY	1
281	401712	MOUNTAIN VIEW TELEPHONE COMPANY	
282	401722	E. RITTER TELEPHONE COMPANY	
283	421893	CHOCTAW TELEPHONE COMPANY	1
284	421900	KLM TEL. CO.	
285	421932	LATHROP TELEPHONE COMPANY	
286	421936	PEACE VALLEY TELEPHONE CO.	
287	421942	ROCK PORT TEL. CO.	1
288	431968	BEGGS TELEPHONE COMPANY	1
289	442043	NORTH TEXAS TELEPHONE COMPANY	
290	442107	LIVINGSTON TELEPHONE COMPANY	1
291	462198	PINE DRIVE TEL. CO.	
292	462206	STONEHAM COOPERATIVE TEL. CO.	1
293	462210	WILLARD TEL. CO.	1
294	472227	MUD LAKE TELEPHONE COOPERATIVE ASSN. INC.	
295	482252	RONAN TEL. CO.	
296	502279	GUNNISON TEL. CO.	
297	502282	MANTI TELEPHONE COMPANY	1
298	502283	SKYLINE TELECOM	
299	532386	MT. ANGEL TELEPHONE COMPANY	1
300	532396	ST. PAUL COOP. TEL. ASSN.	1
301	613005	CIRCLE TELEPHONE & ELECTRIC, LLC	
302	613026	NORTH COUNTRY TELEPHONE COMPANY	

Appendix B
2017 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
1	100015	4519	7	1.0000	521.43
2	100020	2240	3	1.0000	478.09
3	100022	3167	3	1.0000	445.58
4	120042	25	1	1.5000	1221.21
5	140053	762	1	1.0000	482.18
6	140064	2774	6	2.5000	297.31
7	150076	804	1	1.0000	325.42
8	150125	4612	2	1.0000	531.33
9	170145	1470	1	1.0000	577.14
10	170156	3036	1	1.0000	537.59
11	170171	1068	1	2.0000	328.52
12	170191	7941	8	1.0000	438.56
13	170195	411	1	1.5000	461.88
14	170196	4554	4	1.0000	550.11
15	170200	998	1	1.0000	706.54
16	170205	1638	2	1.0000	541.17
17	170210	1033	1	1.0000	1090.29
18	190225	6968	5	2.0000	525.38
19	190238	1397	5	1.0000	891.16
20	190243	2218	2	1.0000	421.41
21	190250	18476	9	1.0000	471.84
22	220324	1382	1	1.0000	367.24
23	220380	3819	6	1.0000	879.26
24	220389	3213	3	1.0000	1010.02
25	230491	48506	3	1.0000	724.85
26	230494	1074	1	2.5000	600.44
27	230496	10226	8	1.0000	703.25
28	230497	1966	2	2.0000	717.44
29	230503	10625	6	1.0000	713.79
30	240546	12912	7	1.0000	536.70
31	250283	5831	3	1.0000	573.48
32	250311	1307	4	1.0000	823.13
33	250312	4570	1	1.0000	415.92
34	260398	14946	8	1.0000	427.26
35	260419	5670	6	1.0000	820.87
36	270428	928	1	1.0000	1261.01
37	290553	25038	17	1.0000	778.89
38	290554	9789	5	1.0000	1010.16
39	290565	16004	10	1.0000	862.83
40	290570	3864	5	1.0000	696.32
41	290598	969	4	1.0000	1498.27
42	300585	421	1	2.0000	943.93
43	300588	728	1	2.5000	717.91
44	300604	740	1	1.0000	695.36
45	300609	1481	1	1.0000	820.76
46	300619	936	1	2.8410	574.89

Appendix B
2017 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
47	300625	1264	1	1.0000	684.30
48	300634	2482	1	1.0000	464.23
49	300639	874	1	2.7840	616.95
50	300651	253	1	1.5000	790.91
51	300654	503	1	2.0000	1128.79
52	300656	772	1	1.0000	1179.69
53	300659	5495	2	1.0000	575.82
54	310675	3641	4	1.0000	561.24
55	310676	5243	4	1.0000	420.67
56	310688	872	1	1.0000	354.61
57	310703	1132	4	1.0000	884.24
58	310725	739	1	2.0000	1080.38
59	320751	1562	2	1.0000	775.16
60	320778	1493	1	1.0000	547.27
61	320792	1745	1	1.0000	1074.38
62	320809	1073	3	1.0000	589.05
63	320816	234	1	1.5000	774.93
64	320837	649	1	2.5000	610.54
65	320839	545	1	3.0102	1182.73
66	330843	4158	3	1.0000	813.63
67	330846	3061	2	1.0000	1125.16
68	330848	112	2	1.0000	1902.95
69	330865	1200	1	1.0000	420.25
70	330875	988	1	1.0000	627.68
71	330879	2431	3	1.0000	507.07
72	330880	4693	4	1.0000	626.79
73	330889	1215	2	2.0000	923.97
74	330905	1624	2	2.5000	1044.41
75	330925	1395	1	1.0000	1364.86
76	330938	3926	4	1.0000	641.24
77	330946	554	2	1.5000	1145.28
78	341024	1577	7	1.0000	1145.83
79	341029	931	2	2.0000	700.81
80	341041	72	1	1.0000	980.94
81	341046	134	1	1.5000	1057.21
82	341050	1649	1	1.0000	651.87
83	341053	2403	2	1.0000	747.51
84	341062	455	1	1.5000	705.55
85	341075	386	1	1.5000	1160.62
86	341087	497	1	1.0000	1152.23
87	341092	58	1	1.5000	1504.21
88	350739	170	1	1.0000	775.53
89	351097	256	1	1.5000	636.65
90	351107	248	1	1.0000	1241.72
91	351113	1153	1	3.0506	488.23
92	351115	1518	4	1.0000	1080.97

Appendix B
2017 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
93	351118	1379	2	2.5000	1056.00
94	351121	91	1	1.0000	971.19
95	351125	3284	3	1.0000	482.25
96	351133	665	4	1.0000	1121.01
97	351137	453	2	1.0000	998.05
98	351139	1161	4	1.0000	712.58
99	351147	650	1	1.0000	2124.25
100	351150	344	1	1.5000	1622.84
101	351157	634	2	1.5000	785.81
102	351171	1777	1	2.5000	889.54
103	351173	1528	4	1.0000	738.92
104	351176	321	1	1.0000	1156.92
105	351179	248	1	1.5000	1289.34
106	351188	340	1	1.5000	803.09
107	351189	707	2	1.0000	779.76
108	351199	350	1	1.5000	970.62
109	351202	512	1	1.0000	936.22
110	351222	566	1	3.4838	806.63
111	351228	217	1	1.5000	634.26
112	351232	471	1	2.7136	567.06
113	351238	210	1	1.5000	1060.01
114	351241	547	1	2.5478	843.28
115	351246	569	2	1.5000	778.10
116	351250	360	1	1.5000	987.41
117	351260	2681	3	2.0000	824.22
118	351261	982	4	1.0000	803.86
119	351264	493	2	1.5000	1355.25
120	351265	145	1	1.0000	1024.44
121	351266	211	1	1.0000	1795.94
122	351270	226	1	1.0000	1151.45
123	351282	970	4	1.5000	719.14
124	351283	317	1	1.0000	1031.84
125	351285	792	2	1.0000	926.10
126	351291	1186	4	1.0000	1147.24
127	351292	175	1	1.0000	750.50
128	351293	829	2	1.0000	866.80
129	351302	957	1	1.0000	733.77
130	351306	616	1	2.9088	1075.68
131	351307	134	1	1.0000	1178.33
132	351308	347	1	1.5000	892.28
133	351309	270	1	1.0000	2405.16
134	351319	1895	6	1.5000	744.88
135	351320	470	1	1.5000	1180.26
136	351322	363	1	1.5000	728.06
137	351331	3339	6	1.0000	960.51
138	351334	2890	8	1.0000	699.13

Appendix B
2017 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
139	351335	260	1	1.5000	1878.22
140	351336	1077	1	2.5000	618.58
141	351342	145	1	1.0000	2016.01
142	351344	404	2	1.5000	1305.11
143	351424	853	3	1.5000	691.98
144	361348	66	1	1.0000	994.73
145	361353	1009	1	3.7719	513.08
146	361390	1919	7	1.0000	1145.01
147	361396	2425	4	2.0000	1051.10
148	361401	1636	10	1.0000	1540.45
149	361403	720	1	1.0000	525.51
150	361409	6442	1	1.0000	495.82
151	361424	650	2	1.5000	681.30
152	361430	6440	8	1.0000	638.36
153	361439	540	3	1.0000	1067.30
154	361440	1122	4	1.0000	786.10
155	361443	7851	9	1.0000	598.57
156	361450	3087	6	2.0000	664.80
157	361472	4100	10	1.0000	438.63
158	361474	420	1	1.5000	994.80
159	361475	3122	9	1.0000	788.96
160	361476	302	1	1.5000	616.91
161	361479	7896	3	1.0000	699.01
162	361487	947	1	2.5000	699.06
163	361495	541	2	1.5000	1003.54
164	361499	1517	1	1.0000	894.03
165	361500	36	1	1.0000	1219.15
166	361502	1411	2	2.5000	472.83
167	361505	5349	18	1.0000	1148.09
168	361512	127	1	1.0000	1059.74
169	361515	1345	1	1.0000	608.55
170	361654	1297	3	1.5000	732.27
171	371530	1038	5	1.0000	1299.82
172	371555	4708	9	1.0000	688.09
173	371563	667	2	1.5000	860.62
174	371581	1274	2	2.0000	768.19
175	371590	63	1	1.5000	963.27
176	381509	240	2	1.0000	861.28
177	381601	40	1	1.5000	1223.85
178	381614	1660	6	1.0000	763.72
179	381622	821	2	1.0000	717.14
180	381638	925	3	1.0000	1242.24
181	391640	1251	3	1.0000	796.56
182	391649	1207	1	1.0000	513.73
183	391660	4237	8	2.0000	696.51
184	391664	2713	14	1.0000	1243.75

Appendix B
2017 Average Schedule USF Study
Sample Average Schedule Study Areas
Data Underlying Cost per Loop Formula Development

	Study Area Code	Actual USF Loop Count	Exchange Count	Sample Weight	Actual Cost per Loop
185	391671	1755	1	1.0000	622.14
186	391682	354	2	1.5000	720.94
187	401710	689	2	1.0000	626.41
188	401712	5400	8	1.0000	507.01
189	401722	2404	8	1.0000	940.96
190	421893	300	1	1.0000	1558.31
191	421900	954	4	1.5000	537.00
192	421936	309	1	1.5000	839.99
193	421942	1279	3	1.0000	663.10
194	431968	1186	1	1.0000	964.65
195	442043	392	2	1.5000	1092.37
196	442107	5051	1	2.0000	551.13
197	462206	61	1	1.5000	1796.79
198	462210	64	1	1.0000	2660.24
199	472227	1072	5	1.0000	821.70
200	502279	1136	1	1.0000	639.32
201	502282	2387	2	1.0000	786.37
202	502283	1915	5	1.0000	769.04
203	532386	1340	1	1.0000	492.15
204	532396	520	1	1.0000	802.20

Appendix C
2017 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
1	100019	3,006	6	501	$16,432	$895.33	$19,454	$1.49	18.4%
2	120042	25	1	25	$348	$1,122.95	$432	-$1.04	24.1%
3	120043	1,405	1	1,405	$0	$589.02	$0	$0.00	0.0%
4	140053	807	1	807	$0	$749.00	$137	$0.17	100.0%
5	140064	2,831	6	472	$18,498	$909.20	$20,013	$0.84	8.2%
6	150076	774	1	774	$0	$764.79	$658	$0.85	100.0%
7	150125	4,557	2	2,279	$0	$550.22	$0	$0.00	0.0%
8	170156	3,065	1	3,065	$0	$550.22	$0	$0.00	0.0%
9	170171	964	1	964	$0	$673.94	$0	$0.00	0.0%
10	170175	2,615	1	2,615	$0	$550.22	$0	$0.00	0.0%
11	170195	397	1	397	$3,343	$945.07	$3,420	$0.67	2.3%
12	170196	4,485	4	1,121	$0	$607.53	$0	$0.00	0.0%
13	170197	929	1	929	$0	$690.67	$0	$0.00	0.0%
14	170205	1,672	2	836	$0	$735.14	$0	$0.00	0.0%
15	170210	1,053	1	1,053	$0	$631.38	$0	$0.00	0.0%
16	190220	117	1	153	$2,311	$1,061.74	$1,665	-$0.40	-28.0%
17	190239	665	1	665	$1,507	$816.91	$2,058	$0.84	36.6%
18	190243	2,289	2	1,145	$0	$605.96	$0	$0.00	0.0%
19	190250	18,148	9	2,016	$0	$550.22	$0	$0.00	0.0%
20	197251	628	1	628	$1,121	$834.60	$2,422	$2.24	116.1%
21	220324	1,183	1	1,183	$0	$603.49	$0	$0.00	0.0%
22	220380	3,916	6	653	$8,879	$822.65	$13,087	$1.13	47.4%
23	220389	3,177	3	1,059	$0	$628.51	$0	$0.00	0.0%
24	230478	1,228	1	1,228	$0	$600.56	$0	$0.00	0.0%
25	230491	39,157	3	13,052	$0	$550.22	$0	$0.00	0.0%
26	230494	897	1	897	$0	$705.98	$0	$0.00	0.0%
27	230496	11,250	8	1,406	$0	$588.95	$0	$0.00	0.0%
28	230497	1,960	2	980	$0	$666.28	$0	$0.00	0.0%
29	230500	566	1	566	$1,773	$864.25	$2,905	$2.39	63.8%
30	230501	26,681	12	2,223	$0	$550.22	$0	$0.00	0.0%
31	230503	10,922	6	1,820	$0	$561.96	$0	$0.00	0.0%
32	230505	2,400	3	800	$0	$752.35	$754	$0.31	100.0%
33	230511	16,682	10	1,668	$0	$571.86	$0	$0.00	0.0%
34	240515	2,806	1	2,806	$0	$550.22	$0	$0.00	0.0%
35	240516	11,041	3	3,680	$0	$550.22	$0	$0.00	0.0%
36	240532	258	1	258	$3,218	$1,011.53	$3,029	$0.61	-5.9%
37	240541	1,681	1	1,681	$0	$571.02	$0	$0.00	0.0%
38	240546	13,486	7	1,927	$0	$554.98	$0	$0.00	0.0%
39	250285	637	1	637	$1,547	$830.30	$2,339	$1.34	51.2%
40	260398	15,783	8	1,973	$0	$551.98	$0	$0.00	0.0%
41	260408	4,638	3	1,546	$0	$579.82	$0	$0.00	0.0%
42	260419	5,582	6	930	$0	$690.19	$0	$0.00	0.0%
43	270428	973	1	973	$0	$669.63	$0	$0.00	0.0%
44	280451	1,674	1	1,674	$0	$571.47	$0	$0.00	0.0%
45	290553	26,918	17	1,583	$0	$577.41	$0	$0.00	0.0%
46	290554	10,087	5	2,017	$0	$550.22	$0	$0.00	0.0%
47	290565	17,205	10	1,721	$0	$568.42	$0	$0.00	0.0%
48	290570	3,835	5	767	$0	$768.14	$3,813	$0.99	100.0%
49	290598	1,024	4	256	$12,272	$1,012.49	$12,070	-$0.28	-1.6%
50	300588	720	1	720	$620	$790.61	$1,413	$1.11	127.9%
51	300589	447	1	447	$3,188	$921.15	$3,390	$0.84	6.3%
52	300591	468	1	468	$3,130	$911.12	$3,347	$0.71	6.9%
53	300609	1,348	1	1,348	$0	$592.73	$0	$0.00	0.0%

Appendix C
2017 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
54	300614	637	1	637	$1,573	$830.30	$2,339	$1.30	48.7%
55	300619	1,005	1	1,005	$0	$654.33	$0	$0.00	0.0%
56	300625	1,356	1	1,356	$0	$592.21	$0	$0.00	0.0%
57	300639	935	1	935	$0	$687.80	$0	$0.00	0.0%
58	300650	1,281	2	641	$3,762	$828.39	$4,598	$0.64	22.2%
59	300656	758	1	758	$0	$772.44	$894	$1.18	100.0%
60	300663	204	1	204	$2,916	$1,037.35	$2,657	$0.29	-8.9%
61	300664	867	1	867	$0	$720.32	$0	$0.00	0.0%
62	310675	3,549	4	887	$0	$710.75	$0	$0.00	0.0%
63	310676	5,461	4	1,365	$0	$591.62	$0	$0.00	0.0%
64	310678	888	1	888	$0	$710.27	$0	$0.00	0.0%
65	310688	643	1	643	$1,346	$827.43	$2,281	$1.57	69.5%
66	310694	456	1	456	$3,130	$916.85	$3,374	$0.96	7.8%
67	310703	820	4	268	$10,201	$1,006.75	$9,431	$0.47	-7.5%
68	320751	1,545	2	773	$0	$765.27	$1,345	$0.87	100.0%
69	320756	615	1	615	$1,687	$840.82	$2,536	$1.54	50.3%
70	320771	315	1	315	$3,342	$984.28	$3,271	$0.64	-2.1%
71	320792	1,681	1	1,683	$0	$570.89	$0	$0.00	0.0%
72	320826	430	1	430	$3,220	$929.28	$3,412	$1.01	6.0%
73	320827	804	1	804	$0	$750.44	$187	$0.23	100.0%
74	320839	538	1	538	$2,600	$877.64	$3,072	$1.12	18.2%
75	330843	4,317	3	1,439	$0	$586.80	$0	$0.00	0.0%
76	330846	3,007	2	1,504	$0	$582.56	$0	$0.00	0.0%
77	330847	677	1	677	$2,411	$811.18	$1,928	-$1.26	-20.0%
78	330848	97	2	49	$1,879	$1,111.47	$1,620	-$0.70	-13.8%
79	330872	1,195	1	1,195	$0	$602.71	$0	$0.00	0.0%
80	330889	1,247	2	624	$3,321	$836.52	$4,912	$1.40	47.9%
81	330896	1,129	2	565	$4,703	$864.73	$5,819	$1.19	23.7%
82	330925	1,318	1	1,318	$0	$594.69	$0	$0.00	0.0%
83	330938	3,670	4	918	$0	$695.93	$0	$0.00	0.0%
84	330946	507	2	254	$6,396	$1,013.45	$6,000	$0.59	-6.2%
85	340983	1,030	2	645	$2,750	$826.47	$3,612	$0.90	31.3%
86	340990	233	1	233	$2,974	$1,023.48	$2,874	-$0.16	-3.4%
87	341021	64	1	64	$1,173	$1,104.30	$1,046	-$0.66	-10.8%
88	341041	64	1	64	$1,142	$1,104.30	$1,046	-$0.70	-8.4%
89	341046	118	1	118	$1,926	$1,078.48	$1,778	-$0.46	-7.7%
90	341050	1,582	1	1,582	$0	$577.47	$0	$0.00	0.0%
91	341053	2,355	2	1,178	$0	$603.82	$0	$0.00	0.0%
92	341062	468	1	468	$3,213	$911.12	$3,347	$0.27	4.2%
93	341087	515	1	515	$2,972	$888.64	$3,185	$0.41	7.2%
94	351098	260	1	260	$3,120	$1,010.58	$3,040	-$0.08	-2.6%
95	351101	946	1	946	$0	$682.54	$0	$0.00	0.0%
96	351107	257	1	257	$3,065	$1,012.01	$3,023	-$0.30	-1.4%
97	351113	1,243	1	1,243	$0	$599.58	$0	$0.00	0.0%
98	351133	688	4	172	$9,781	$1,052.66	$9,483	-$0.50	-3.0%
99	351141	657	1	657	$1,520	$820.73	$2,141	$0.98	40.9%
100	351153	595	1	595	$2,458	$850.38	$2,699	$0.31	9.8%
101	351157	630	2	315	$6,580	$984.28	$6,543	$0.02	-0.6%
102	351162	994	2	497	$6,084	$897.25	$6,515	$0.51	7.1%
103	351166	620	1	620	$2,074	$838.43	$2,493	$0.68	20.2%
104	351173	1,713	4	428	$13,459	$930.24	$13,661	-$0.41	1.5%
105	351175	267	1	267	$3,148	$1,007.23	$3,077	-$0.09	-2.3%
106	351188	320	1	320	$3,353	$981.89	$3,285	$0.69	-2.0%

Appendix C
2017 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
107	351189	742	2	371	$6,743	$957.49	$6,788	-$0.06	0.7%
108	351191	494	1	494	$3,162	$898.68	$3,268	$0.01	3.4%
109	351199	328	1	328	$3,359	$978.06	$3,305	$0.59	-1.6%
110	351202	472	1	516	$2,676	$888.16	$2,909	$0.60	8.7%
111	351205	922	2	461	$6,434	$914.46	$6,727	$0.37	4.6%
112	351232	498	1	498	$3,105	$896.77	$3,254	$0.21	4.8%
113	351242	433	1	433	$3,235	$927.85	$3,409	$0.86	5.4%
114	351246	588	2	294	$6,487	$994.31	$6,399	-$0.04	-1.4%
115	351269	528	1	528	$3,008	$882.42	$3,124	$0.01	3.9%
116	351270	237	1	237	$2,974	$1,021.57	$2,900	-$0.26	-2.5%
117	351275	141	1	141	$2,171	$1,067.48	$2,047	-$0.45	-5.7%
118	351278	645	1	645	$2,030	$826.47	$2,262	$0.25	11.4%
119	351283	311	1	311	$3,271	$986.18	$3,259	-$0.18	-0.4%
120	351292	187	1	187	$2,546	$1,045.49	$2,511	-$0.56	-1.4%
121	351293	862	2	431	$6,634	$928.80	$6,821	$0.23	2.8%
122	351301	487	3	162	$7,056	$1,057.43	$6,828	-$0.50	-3.2%
123	351302	1,072	1	1,072	$0	$622.29	$0	$0.00	0.0%
124	351306	655	1	655	$1,573	$821.69	$2,162	$0.92	37.4%
125	351320	485	1	485	$3,100	$902.99	$3,299	$0.50	6.4%
126	351322	395	1	395	$3,371	$946.02	$3,419	$0.21	1.4%
127	351331	3,217	6	536	$15,652	$878.60	$18,502	$1.14	18.2%
128	351336	1,000	1	1,000	$0	$656.72	$0	$0.00	0.0%
129	361353	1,131	1	1,131	$0	$606.87	$0	$0.00	0.0%
130	361356	4,099	5	820	$0	$742.80	$0	$0.00	0.0%
131	361390	1,860	7	266	$21,979	$1,007.71	$21,482	-$0.09	-2.3%
132	361396	2,664	4	666	$6,444	$816.43	$8,189	$0.63	27.1%
133	361401	1,660	10	166	$24,306	$1,055.52	$23,115	-$0.38	-4.9%
134	361403	696	1	696	$1,048	$802.09	$1,710	$0.96	63.2%
135	361404	835	2	418	$6,700	$935.02	$6,831	$0.15	2.0%
136	361423	738	1	738	$1,063	$782.00	$1,174	$0.07	10.4%
137	361475	3,204	9	356	$30,009	$964.67	$30,303	-$0.40	1.0%
138	361479	7,857	3	2,619	$0	$550.22	$0	$0.00	0.0%
139	361499	1,452	1	1,452	$0	$585.95	$0	$0.00	0.0%
140	361512	136	1	136	$2,022	$1,069.87	$1,991	-$0.68	-1.5%
141	371555	4,858	9	540	$25,743	$876.69	$27,540	$0.29	7.0%
142	371590	60	1	60	$1,112	$1,106.21	$987	-$0.66	-11.2%
143	381509	271	2	136	$4,044	$1,069.87	$3,967	-$0.68	-1.9%
144	381614	1,151	5	230	$14,855	$1,024.92	$14,278	-$0.09	-3.9%
145	381615	1,523	4	381	$13,511	$952.71	$13,620	$0.15	0.8%
146	381622	817	2	409	$6,692	$939.33	$6,836	$0.33	2.2%
147	381638	946	3	315	$9,964	$984.28	$9,824	$0.41	-1.4%
148	391640	1,380	3	460	$9,824	$914.94	$10,096	$0.04	2.8%
149	391649	1,273	1	1,273	$0	$597.62	$0	$0.00	0.0%
150	391650	9,507	1	9,507	$0	$550.22	$0	$0.00	0.0%
151	391653	288	1	288	$3,218	$997.18	$3,176	-$0.11	-1.3%
152	391671	1,797	1	1,797	$0	$563.46	$0	$0.00	0.0%
153	391682	386	2	193	$5,220	$1,042.62	$5,128	-$0.49	-1.8%
154	401710	698	2	349	$6,726	$968.02	$6,702	$0.18	-0.4%
155	421893	296	1	296	$3,285	$993.36	$3,208	$0.34	-2.3%
156	421942	1,363	3	454	$9,720	$917.80	$10,140	$0.38	4.3%
157	431968	1,147	1	1,147	$0	$605.83	$0	$0.00	0.0%
158	442107	5,307	1	5,307	$0	$550.22	$0	$0.00	0.0%
159	462206	58	1	58	$1,003	$1,107.17	$957	-$0.79	-4.6%

Appendix C
2017 Average Schedule USF Study
Comparison of Current and Proposed Monthly HCL Support Payments

Obs	Study Area Code	Loops	Exch	Loops per Exch	Current Payments	Proposed Cost per Loop *	Proposed Payment (Fund Cap Appl.)	Per Loop Payment Difference	Payment Percent Difference
160	462210	65	1	65	$1,127	$1,103.82	$1,061	-$0.75	-5.9%
161	502282	1,334	1	1,334	$0	$593.65	$0	$0.00	0.0%
162	532386	1,320	1	1,320	$0	$594.56	$0	$0.00	0.0%
163	532396	563	1	563	$2,633	$865.69	$2,925	$0.51	11.1%
	Total:	426,072			$502,301		$537,363	$0.13	7.0%

* Proposed Cost per Loop with Opex limit applied

Appendix C1
2017 Average Schedule USF Study
Model Companies Proposed 2018 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
1	100005	316	1	316	$983.80
2	100020	2,200	3	733	$784.39
3	100022	2,956	3	985	$663.89
4	170191	7,977	8	997	$658.15
5	170200	761	1	761	$771.01
6	170277	31	1	31	$1,120.08
7	190225	6,790	5	1,358	$592.08
8	190226	16,543	4	4,136	$550.22
9	190237	1,296	3	432	$928.33
10	190238	1,457	5	291	$995.75
11	200258	791	1	791	$756.66
12	240535	460	1	460	$914.94
13	250283	5,582	3	1,861	$559.29
14	250311	1,302	4	326	$979.02
15	250312	4,399	1	4,399	$550.22
16	280467	607	1	607	$844.65
17	287449	401	1	401	$943.15
18	300585	416	1	416	$935.98
19	300633	484	1	484	$903.46
20	300645	862	1	862	$722.71
21	300651	256	1	256	$1,012.49
22	300654	554	1	554	$869.99
23	300659	5,456	2	2,728	$550.22
24	300662	461	1	461	$914.46
25	310725	738	1	738	$782.00
26	310735	637	1	637	$830.30
27	320778	1,526	1	1,526	$581.13
28	320809	1,044	3	348	$968.50
29	320816	211	1	211	$1,034.01
30	320837	675	1	675	$812.13
31	330842	4,580	3	1,527	$581.06
32	330865	1,276	1	1,276	$597.43
33	330868	1,906	3	635	$831.26
34	330875	994	1	994	$659.59
35	330879	2,508	3	836	$735.14
36	330880	4,745	4	1,186	$603.30
37	330905	1,734	2	867	$720.32
38	330914	3,576	5	715	$793.00
39	330951	2,595	1	2,595	$550.22
40	340993	305	1	305	$989.05
41	341016	6,812	2	3,406	$550.22
42	341017	884	1	884	$712.18
43	341024	1,646	7	235	$1,022.53
44	341029	878	2	439	$924.98
45	341075	381	1	381	$952.71
46	341086	272	1	272	$1,004.84
47	341092	53	1	53	$1,109.56
48	351097	258	1	258	$1,011.53
49	351108	92	1	92	$1,090.91
50	351112	821	3	274	$1,003.88
51	351114	277	1	277	$1,002.45
52	351115	1,019	4	379	$953.67
53	351119	221	1	221	$1,029.22
54	351121	94	1	94	$1,089.95
55	351125	4,466	3	1,489	$583.54

Appendix C1
2017 Average Schedule USF Study
Model Companies Proposed 2018 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
56	351136	325	1	325	$979.50
57	351137	468	2	234	$1,023.00
58	351139	1,187	4	297	$992.88
59	351146	206	1	206	$1,036.40
60	351147	650	1	650	$824.08
61	351149	236	1	236	$1,022.05
62	351150	313	1	313	$985.24
63	351168	1,543	7	220	$1,029.70
64	351171	1,882	1	1,882	$557.92
65	351176	295	1	295	$993.84
66	351179	256	1	256	$1,012.49
67	351212	2,500	1	2,500	$550.22
68	351213	214	1	214	$1,032.57
69	351222	574	1	574	$860.42
70	351228	225	1	225	$1,027.31
71	351235	493	1	493	$899.16
72	351238	209	1	209	$1,034.96
73	351239	353	2	177	$1,050.27
74	351241	593	1	593	$851.34
75	351247	709	4	177	$1,050.27
76	351250	352	1	352	$966.58
77	351257	659	1	659	$819.78
78	351260	2,668	3	889	$709.79
79	351261	983	4	246	$1,017.27
80	351264	499	2	250	$1,015.36
81	351265	158	1	158	$1,059.35
82	351266	210	1	210	$1,034.48
83	351273	542	1	542	$875.73
84	351282	946	4	237	$1,021.57
85	351285	782	2	391	$947.94
86	351291	1,217	4	304	$989.53
87	351307	132	1	132	$1,071.78
88	351308	347	1	347	$968.97
89	351309	277	1	277	$1,002.45
90	351310	432	1	432	$928.33
91	351319	2,050	6	342	$971.37
92	351334	2,939	8	367	$959.41
93	351335	274	1	274	$1,003.88
94	351342	136	1	136	$1,069.87
95	351344	380	2	190	$1,044.05
96	351424	890	3	297	$992.88
97	361348	70	1	70	$1,101.43
98	361365	218	1	218	$1,030.66
99	361372	128	1	128	$1,073.70
100	361408	1,244	3	415	$936.46
101	361409	6,189	1	6,189	$550.22
102	361413	1,166	4	292	$995.27
103	361424	686	2	343	$970.89
104	361430	6,345	8	793	$755.70
105	361431	1,945	4	486	$902.51
106	361439	499	3	166	$1,055.52
107	361440	1,111	4	278	$1,001.97
108	361443	8,028	9	892	$708.37
109	361450	3,106	6	518	$887.20
110	361472	4,148	10	415	$936.46

Appendix C1
2017 Average Schedule USF Study
Model Companies Proposed 2018 USF Loops and Cost per Loop

Obs	Study Area Code	Loops	Exch	Loops per Exch	Proposed Cost per Loop *
111	361474	438	1	438	$925.46
112	361476	301	1	301	$990.97
113	361487	891	1	891	$708.85
114	361495	531	2	266	$1,007.71
115	361500	39	1	39	$1,116.26
116	361502	1,393	2	697	$801.61
117	361505	5,752	18	320	$981.89
118	361508	557	1	557	$868.56
119	361515	1,322	1	1,322	$594.43
120	361654	1,361	3	454	$917.80
121	371530	1,086	5	217	$1,031.14
122	371563	642	2	321	$981.41
123	371581	1,243	2	622	$837.47
124	381601	43	1	43	$1,114.34
125	391660	4,242	8	530	$881.47
126	391664	2,681	14	192	$1,043.09
127	401712	5,576	8	697	$801.61
128	401722	2,377	8	297	$992.88
129	421900	926	4	232	$1,023.96
130	421932	1,156	1	1,156	$605.25
131	421936	312	1	312	$985.72
132	442043	348	2	174	$1,051.70
133	462198	779	1	779	$762.40
134	472227	831	5	221	$1,029.22
135	482252	2,135	2	1,068	$624.20
136	502279	1,179	1	1,179	$603.75
137	502283	1,275	3	425	$931.67
138	613005	67	1	67	$1,102.86
139	613026	157	1	157	$1,059.83

* Proposed Cost per Loop with Opex limit applied